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09/300,490	04/28/1999	MENASHE BENJAMIN	032/00898	4519

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REED SMITH, LLP  
ATTN: PATENT RECORDS DEPARTMENT  
599 LEXINGTON AVENUE, 29TH FLOOR  
NEW YORK, NY 10022-7650

EXAMINER

BROWN, RUEBEN M

ART UNIT	PAPER NUMBER
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2611

12

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/300,490

Applicant(s)

BENJAMIN ET AL.

Examiner

Reuben M. Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 14 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-76 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-42 and 47-76 is/are rejected.
- 7) ☐ Claim(s) 43-46 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 4/14/2003 have been fully considered but they are not persuasive. With respect to claim 64 and throughout the remarks, applicant argues on page 1 that Doyle does not include the claimed feature of 'downloading image reconstruction software'. Examiner respectfully disagrees with applicant's assertion. First of all, examiner points out that the term 'image reconstruction software' is broad enough to read on any and all software applications that reconstructs an image from its transmission state to a state that can displayed to the viewer in a format that can be understood. Thus for instance, 'image reconstruction software' reads on decompression software, which is clearly discussed by Doyle, col. 3, lines 34-51. In the above passage, Doyle teaches that a code may be sent along with images, which decompresses data, for display by the user.

Furthermore, Doyle discloses that versions of software embodying the invention, (i.e. the application client 210), are available as hyperlinked data objects, see col. 10, lines 16-33. Thus Doyle not only teaches that generic decompression code, such as self-extracting code may be sent to a user from a server, but also sophisticated viewing presentation applications, such as application client 210.

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With respect to the 103 rejections, applicant argues on pages 2-3 that Nagashima does not teach the claimed feature of 'progressive transmission'. Again examiner respectfully disagrees, since Nagashima clearly teaches that image data may be transmitted to the user in layers of resolution, wherein the more volume of data that the user receives, then the higher the resolution; see col. 6, lines 28-35; col. 8, lines 35-60.

Moreover, examiner points out that the term 'progressive transmission' is broad enough to read on the fact that video data is transmitted to the viewer over time, sometimes referred to as streaming. Generally, a complete video file is not transmitted to and received by a client in an instant of time, the video file is transmitted as a transport stream in MPEG technology, which is cited in Doyle, col. 3, lines 34-36 & col. 11, lines 1-15.

With respect to claim 1, as pointed out above, examiner asserts that image reconstruction software reads on the self-extracting decompression software that is disclosed as being sent along with images and the application client 210, which may be accessed from a server, at least as a hyperlinked object.

Concerning claim 2, image processing reads on the operation of both of the software applications mentioned with respect to claim 1.

Concerning claim 3, Doyle teaches that the application client 210 includes an image selection feature, col. 9, lines 47-61.

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Regarding claim 4, the feature of controlling the transmission of data is broad enough to read on initiating the transmission.

Regarding claims 5 & 7, the application client 210 includes both image selection and image reconstruction software.

Regarding applicant's objection to the Official Notice of claims 11 & 24, examiner supplies a reference, Cushman, which teaches reducing the number of bits per pixel, along with other processing, including greylevel processing; see Abstract; col. 3 & col. 4.

Regarding claim 13, Doyle teaches transmitting image data according to frame buffers and then only transmits updated frame buffers, col. 11, lines 1-13.

Regarding applicant's objection to Official Notice of claims 14-17, examiner points to Gosling, already cited, which discusses the use of JAVA codes and the benefits of device independent programming.

Regarding claims 18-23 & 25, the frame buffer technique previously discussed in Doyle, col. 11, lines 1-18, progressively updates the quality of images, as well as the previously cited portions of Nagashima.

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*Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 64-65 & 74 are rejected under 35 U.S.C. 102(e) as being anticipated by Doyle, (U.S. Pat # 5,838,906).

Considering claim 64, the claimed interactive method for allowing a user to obtain image data for diagnostic purposes from a server having access to stored data, comprising connecting a user's computer to the server over a communications network is met by the disclosure of Doyle, which teaches a system wherein client computer accesses medical images from a server computer over the Internet, see col. 8, lines 55-65 & col. 9, lines 59-65.

The additionally claimed step of receiving from the server image reconstruction software for the user's computer reads on the disclosure of Doyle that application client 210, which is used by the user's computer to display the medical images (col. 9, lines 42-48), may be received as a hyperlinked software from a server related to the medical images, see col. 10, lines 27-32. The operation of the application client 210, of requesting a data object from a server reads on the claimed step of requesting specific image data over the network, col. 9, lines 49-61. Doyle meets the claimed feature of transmitting the requested image data over the network from the server to the user's computer, col. 9, lines 61-63. The operation of the application client 210 also reads on the claimed feature of reconstructing a diagnostic quality image from the received image data using the reconstruction software, see col. 9, lines 42-48 & col. 9, lines 66-67 thru col. 10, lines 1-2.

Considering newly added claims 65 & 74, Doyle teaches that the application client 210 requests images from the server, whereas the application client 210 itself, may be transmitted to the user from a sever, via hyperlink; see col. 9, lines 45-65 & col. 10, lines 15-35.

Regarding applicant's discussion of Ward, the relevant claims recite various algorithms for related to compression, which are discussed in Ward. Applicant's assertion that Ward is not related to compression, is not understood, since Ward clearly operates in an MPEG environment, see col. 4, lines 47-67.

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-36, 47-63, 66-73 & 75-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle, in view of Nagashima, (U.S. Pat 3 6,275,988).

Considering claim 1, the claimed method steps of an interactive method for allowing a user to obtain image data for diagnostic purposes corresponds directly with subject matter mention above in the rejection of claim 64, and is likewise treated. Claim 1 includes the additional limitation of progressively transmitting the image data, even though Doyle teaches that images may be updated, progressive transmission is not necessarily disclosed.

Nagashima discloses the very well known hierarchical encoding/decoding of image data, which reads on progressive transmission, see col. 1, lines 41-55; col. 2, lines 55-58 & col. 7, lines 1-15. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Doyle with the technique of progressive image transmission, as taught by Nagashima, for the desirable benefit of reducing the amount of bandwidth needed at a given time to transmit the image, since the whole image is not immediately transmitted, see Nagashima col. 3, lines 10-45.



Considering claim 2-5, the subject matter recited in the instant claim reads on the operation of the application client 210, Doyle, col. 9, lines 40-67.

Considering claims 6-7, the image selection software and reconstruction software are both included in the operation of the application client 210, and thus are received together.

Considering claim 8, the claimed feature of stopping the transmission of data, after at least a low quality image is received reads on the operation of Nagashima, which teaches that the user is enabled to control the quality of reception of an image, see col. 4, lines 40-42 & co. 14, lines 5-67, and the system determines when that value is met.

Considering claim 9, even though Nagashima does not explicitly state that the transmission of an image may be re-started, Official Notice is taken that at the time the invention was made, it was well known in the art to provide end user's with the means to Pause/Stop/Play video-on-demand movies transmitted over a network. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate the combination of Doyle & Nagashima with the well-known VCR-like functions, at least for the desirable advantage of allowing the end user to opportunity to increase the image quality of the instant received image data.

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Considering claims 10 & 12, Doyle teaches that in one embodiment, a user's manipulation of an image causes the volume rendering calculations to be generated at the server, col. 10, lines 47-65.

Considering claims 11 & 24, even though Doyle discloses the use of MPEG and JPEG compression algorithm, the instant recited technique is not discussed. Nevertheless, Official Notice is taken that at the time the invention was made, numerous other compression techniques were known in the art of data transmission. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Doyle the known technique of bit reduction, at least for the benefit of reducing the amount of information transmitted in an image, thereby increasing its transmission speed over a network.

As for the gray scale component recited in claim 24, Official Notice is taken that gray-level processing was well known in the art at the time the invention was made. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate the combination of Doyle & Nagashima using gray-level processing at least for the known purpose of processing black/white images, instead of color images.

Considering claims 13 & 75, the recited subject matter reads on Doyle col. 11, lines 1-18.

Considering claims 14-17 & 70, Official Notice is taken that device independent programming was well known in the art at the time the invention was made. It would have been

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obvious for one of ordinary skill in the art at the time the invention was made, to modify Doyle with the known technique of device independent programming at least for the desirable benefit of more efficient applications, which can run a wider variety of client machines.

Considering claims 18-19, 22-23, 25 & 53-54, the claimed feature of progressively improving quality reads on Nagashima, col. 3, lines 18-55 & col.6, lines 28-35, which teaches that the image data is transmitted to the user terminal in layers, such that the received image improves in quality as more layers are received.

The additionally claimed feature of using the improved images quality to decide on the processing of the reads on the operation disclosed in Nagashima of measuring the volume of image is received, and continuing to receive/decode image data until the desired image quality is met, col. 10, lines 45-64 & col. 14, lines 10-25. Interactively selecting regions of interest in the images based on the progressively improved images, reads on recursively adding layers of higher resolution to the image data, as taught by Nagashima, col. 6, lines 30-35

Considering claim 20, the claimed subject matter reads on the operation of Nagashima, since the received image is being improved over time, by receiving additional layers of image data.

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Considering claim 21, the recited steps of an interactive method for allowing a user to obtain image data for diagnostic purposes, which correspond with subject matter mentioned above in the rejection of claim 1 and claims 19-20 and are likewise treated.

Considering claim 26, Nagashima teaches that the measuring and encoding of image data may occur at the transmitter computer, col. 8, lines 35-42; col. 12, lines 39-45; col. 13, lines 1-13; col. 13, lines 35-40.

Considering claim 27, the claimed steps of an interactive method for allowing a user to obtain image data from a server, correspond with subject matter mentioned above in the rejection of claims 1, 11 & 24, and are likewise analyzed.

Considering claims 28-29, the user in Nagashima is enabled to choose the image quality desired for a requested image. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate the combination of Doyle & Nagashima in manner in which the end user is enabled to choose reduced image quality, at least for the desirable benefit of accommodating end users with less power in their computer.

Considering claims 30-31, Official Notice is taken that at the time the invention was made, numerous algorithms were known in the art for adjusting the image quality of received data. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate the combination of Doyle & Nagashima such that any number of algorithms

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would be used to reduce the amount of information transmitted in an image, at least in order to present a more smooth transmission between image layers.

Considering claims 32-33, the recited feature of pyramidal composing of the image data, reads on the hierarchical arrangement of the layers of increasing resolution, see col. 6, lines 28-35 & col. 7, lines 1-26.

Considering claim 34, see col. 7, lines 21-38.

Considering claim 35, the claimed subject matter reads on the operation of Nagashima, col. 7, lines 1-26

Considering claim 36, the recited subject matter reads on the standard operation of MPEG compression & decompression, which is disclosed in Doyle, see col. 7, lines 21-25 & col. 11, lines 12-15.

Considering claim 47 & 49, Doyle, col. 8, lines 58-64 meets the claimed subject matter.

Considering claim 48, Doyle teaches that a client computer may connect to the Internet using a modem, which suggests a dial-up connection; see col. 8, lines 48-50.

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Considering claims 50-52, Doyle discloses that small scaled-down versions of images are initially transmitted to the client computer, from which the user makes a selection to receive the larger, improved quality image, col. 2, lines 65-67 thru col. 3, lines 1-8.

Considering claims 55-57, Nagashima teaches transmitting images in layers. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate the combination of Doyle & Nagashima in a manner wherein either the background or foreground image is transmitted first.

Considering claim 58, stopping the transmission of the image data before the background is sent reads on the user terminal receiving the image data with requested resolution prior to the background image being transmitted.

Considering claim 59, Official Notice is taken that at the time the invention was made, loss-less transmission techniques were known in the art. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to transmit image data for achieving loss-less transmission, for the desirable improvement of a higher quality image displayed at the end destination.

Considering claim 60, the claimed method steps of an interactive method for allowing a user to obtain image data that corresponds with subject matter mentioned above in the rejection of claim 1, are likewise treated. The additionally claimed feature of stopping transmission, at a

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command from a user, reads on the operation of Nagashima, col. 4, lines 40-42 & col. 10, lines 58-64.

Considering claim 61-63, the claimed features are met by Nagashima, col. 4, lines 40-42; col. 10, lines 58-64; col. 7, lines 1-15.

Considering claim 66, in order for the application client 210 to request an image, it must have already been received at the user's computer.

Considering claim 67, the claimed subject matter of progressively reconstructed images corresponds with subject matter mentioned above, regarding claim 1.

Considering claim 68, Doyle describes an embodiment wherein the server processes images, col. 5, lines 38-65 & col. 10, lines 47-67.

Considering claim 69, it would have been obvious to transmit only certain data to subscribers from a network connection, at least for the benefit of providing an ease of transmission algorithm.

Considering claim 71, it would have been obvious to enable the subscriber to view the quality of images before stopping transmission at least in order to make certain that the quality is not acceptable.

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Considering claim 72, it would have been obvious for a physician/subscriber to begin any process while waiting for images to download and reconstruct, so that time is not wasted.

Considering claim 73, Doyle discloses manipulating the image data, col. 10, lines 1-8.

Considering claim 76, it would have been obvious to utilize an industry standard browser, at least in order to reduce the costs of customized software.

6. Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle & Nagashima, as applied to claim 36 above, and further in view of Ward, (U.S. Pat # 5, 793,735).

Considering claim 37-40, at the time the invention was made, encoding image data by predicting a pixel value, using the corresponding value of its spatial and temporal neighbors was known in the art and is taught by Ward, (Abstract; col. 3, lines 15-20; col. 4, lines 5-35; col. 4, lines 46-55. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to utilize the well-known spatial/temporal interpolation techniques at least for the desirable benefit of a more smooth presentation of the image data, as taught by Ward, see col. 1, lines 45-58.



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7. Claims 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle & Nagashima, as applied to claim 41 above, and further in view of Hirabayashi, (U.S. Pat # 6,101,282).

Considering claims 41-42, at the time the invention was made, Golomb-Rice entropy encoding was well known in the art and is taught by Hirabayashi, col. 8, lines 42-48. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to operate the combination of Doyle & Nagashima, using the well known Golomb-Rice entropy encoding technique, at least for the desirable benefit of an efficient encoding algorithm.

***Allowable Subject Matter***

8. Claims 43-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).*

Any inquiry concerning this communication or earlier communications from the  
examiner should be directed to Reuben M. Brown whose telephone number is (703) 305-2399.  
The examiner can normally be reached on M-F (8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
supervisor, Andrew I. Faile can be reached on (703) 305-4380. The fax phone numbers for the  
organization where this application or proceeding is assigned is (703) 872-9314 for regular  
communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the receptionist whose telephone number is (703) 305-4700.

Reuben M. Brown

  
ANDREW FAILE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600